CLAIMS

We Claim:

1. A method of determining a prognosis, comprising:

a) providing a blood sample from a subject, wherein said blood sample comprises neutrophils, and wherein said subject is diagnosed with sepsis; and

b) detecting the level of expression of C5aR on said neutrophils.

2. The method of claim 1, wherein an increased level of expression of said C5aR on said neutrophils relative to a normal standard is indicative of an increased rate of survival of said subject.

3. The method of claim 1, wherein a decreased level of expression of said C5aR on said neutrophils relative to a normal standard is indicative of a decreased rate of survival of said subject.

4. The method of claim 1, wherein said detecting the level of expression of C5aR on said neutrophils comprises exposing said blood sample to an anti-C5aR antibody.

5. The method of claim 4, wherein said antibody is labeled with a fluorescent label.

6. The method of claim 5, wherein said detecting the level of expression of C5aR on said neutrophils further comprises subjecting said blood sample to fluorescence activated cell sorting.

7. The method of claim 1, wherein said method is completed in one hour or less.

8. The method of claim 1, wherein said blood sample comprises 100 μl or less of blood.

9. A method of screening compounds, comprising

a) providing

i) a neutrophil, wherein said neutrophil expresses C5aR; and

ii) one or more test compounds; and

b) contacting said neutrophil with said test compound; and

c) detecting the level at which said neutrophil expresses said C5aR.

10. The method of claim 9, wherein said neutrophil expresses more of said C5aR in the presence of said test compound than in the absence of said test compound.

11. The method of claim 9, wherein said detecting the level of expression of C5aR on said neutrophils comprises exposing said blood sample to an anti-C5aR antibody.

12. The method of claim 11, wherein said antibody is labeled with a fluorescent label.

13. The method of claim 12, wherein said detecting the level of expression of C5aR on said neutrophils further comprises subjecting said blood sample to fluorescence activated cell sorting.

14. The method of claim 10, wherein said cell is in a host.

15. The method of claim 14, wherein said host has been diagnosed with sepsis.

16. The method of claim 14, wherein said host is a non-human animal.

17. The method of claim 16, wherein said non-human animal is an animal model of sepsis.

18. The method of claim 9, wherein said test compound is an anti-C5aR antibody.

19. The method of claim 9, wherein said test compound is a C5aR antagonist.

20. A kit for providing a prognosis to a subject diagnosed with sepsis, comprising

a) a reagent for determining the level of C5aR expression on a neutrophil; and

b) instructions for using said reagent for providing a prognosis to said subject.

21. The kit of claim 20, wherein said reagent is an anti-C5aR antibody.

22. The kit of claim 21, wherein said antibody is labeled with a fluorescent label.

23. The kit of claim 22, wherein said kit further comprises reagents for using fluorescence activated cell sorting to detect said antibody.

24. The kit of claim 20, further comprising a normal standard for C5aR expression.

25. The kit of claim 24, further comprising instructions for using said normal standard for quantitating the level of C5aR expression on neutrophils of said subject.

26. A method of treating sepsis, comprising

a) providing a reagent capable of blocking a C5a receptor; and

b) administering said reagent to a subject suffering from sepsis.

27. The method of claim 26, wherein said administering results in a decrease in symptoms of sepsis in the subject.

28. The method of claim 26, wherein said reagent is a small molecule antagonist of the C5a receptor.

29. The method of claim 28, wherein said small molecule antagonist is selected from the group consisting of F[OPdChaWR] and MeFKPdChaFR.

30. The method of claim 26, wherein said is an antibody specific for the C5a receptor.